

Mechanical and Optical

USSR

UDC 534

BRAGINSKIY, V. M.

"Problem of Autooscillations of a Vibroshock System with Two Degrees of Freedom"

Sb. nauch.-metod. statey po teor. mekh. M-vo vyssh. i sredn. spets. obrazovaniya SSSR (Collection of Scientific Procedural Articles on Theoretical Mechanics, USSR Ministry of Higher and Middle Specialized Education), 1971, vyp. 2, pp 35-39 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11A152)

Translation: A study was made of a vibroshock system the housing of which rotating with constant angular velocity is connected to the striker by a twisted tension-compression-torsion spring. A releasing coupling is put on the striker in the form of a stationary limiter which resists the rotation of the striker. Point transformations were used to study the periodic movements of the system under the following assumptions: energy dissipation takes place only on collision; the collision time is appreciably less than the time of movement of the striker between impacts; dry friction exists between the striker and the limiter, and the impact momentum of the dry friction is proportional to the longitudinal impact momentum.

1/1

USSR

UDC 627.81:551.48(47+57)

~~BRACHTSEV, A. P.~~

"Water Balance of the Northeastern European USSR (1966)"

Izuch. i ispol'z vodn. resursov SSSR. 1966-1967 -- v sb. (Study and Use of USSR River Resources. 1966-1967 -- Collection or Works), Moscow, Nauka Press, 1970, pp 55-56 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D17)

Translation: This article contains an analysis of the water balance components -- precipitation, runoff and evaporation -- the distribution of these elements with respect to territory and a procedure for calculating them. The water balance is calculated for the natural subzones of the Northeastern European USSR and for the entire region as a whole on the basis of the data obtained. There is 1 table.

1/1

BRILLOVSKIY, I.

Public Health /
Epidemiology

30 Oct 70

52

HYGIENE

U.S.

1970, A. V. Vedenyayeva, Moscow, 11-12-70, p. 2

Students work and examinations from students. The existing methods have been used for processing data. Besides this, television pictures and photographs have been included in the lecture halls; the studies section controller will see at any moment how the lecture is going.

2/2

SOI FOREIGN PRESS AGENT
30 OCT 70

22. USSR

3. Medicine and Public Health

KOZYREV, A., Director of the Pathological Department, Institute of Pathology, Chief Physician of City Clinical Hospital No. 1, and Kozlovskiy, G., Deputy Chief Physician for Medical Section, Novosibirsk City Computer in the Hospital.

Moscow, Meditsinskaya Gazeta, 25 Oct 70, p. 2

Abstract: This 100-bed, multi-story hospital is using a PDP-11 computer for information processing. Several different kinds of data are handled by the computer.

The primary analysis is of patient records, which are begun as part of the admission process, continued by medical records during the hospital stay, and completed at discharge time. Computerized efforts have been expended to make the data and procedures as brief and simple as possible, while still collecting the necessary information. Patient records are handled by a variety of programs, particularly for difficulties or errors in diagnosis. The analysis of 20,000 such records has enabled the hospital to pinpoint types of pathology which lead to difficulties in diagnosis.

1/2

USSR

UDC: 621.315.592

BRAILOVSKIY, Ye. Yu., BRUDNYY, V. N., KRIVOV, M. A., and RED'KO, V. B.

"Optical Absorption Spectra of n-GaAs Irradiated by Large Integral Electron Beams"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2075-2077

Abstract: A description is given of experiments in which the optical absorption spectra of n-GaAs in the region of 0.5-1.5 eV, bombarded by electrons of energy 1.6-1.8 MeV at temperatures of 80-100° C, were measured. The original specimens were alloyed with tellurium and had electron concentrations of $1-2 \cdot 10^{16}/\text{cm}^3$ at $T = 300^\circ \text{K}$. Transmission spectra were obtained at temperatures of 80 and 300° K, and the absorption spectra were calculated from them with the reflection coefficient taken at 0.3. As a result of the irradiation, the electron concentration in the specimens dropped, and the Fermi level tended toward the middle of the forbidden band. Curves are plotted for the specific electron conductivity of the specimens and for the characteristic absorption spectra of the n-GaAs irradiated with electrons at a dosage of $3.6 \cdot 10^{18}$ electrons per cm^2 .

1/1

- 201 -

USSR

UDC 621.382

BRILLOVSKIY, YE.YU., KONOZENKO, I.D.

"On The Participation Of Doping Impurities In The Formation Of Radiation Defects In Gallium Arsenide"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Non-Metallic Crystals--Collection Of Works), Minsk, "Nauka i tekhn.," 1970, pp 91-96 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B36)

Translation: The effect is investigated of Co^{60} Gamma irradiation on the electrical properties of single crystals of n-type GaAs, doped with Te and non-doped, and single crystals of p-type GaAs doped with Mo, Ni, Co. The rate of introduction of defects and the energy position of the levels in the forbidden band are determined and annealing of the defects is conducted. It is shown that in n-type GaAs the atoms of the doping impurity Te do not participate in the formation of radiation defects responsible at room temperature for a change of the concentration of carriers and conversely in p-type GaAs, the kind of doping impurity has an effect on the type of radiation defects. 5 ill. 1 tab. 6 ref. Summary.

1/1

- 69 -

USSR

UDC: 8.74

BRAKHIN, V., KARGALOV, B., KUZ'MIN, K.

"Interpreting System for the 'Ural-14' Computer Oriented for the Diur-14-1 Controller"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 5-18 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1011)

Translation: The paper describes the purpose and structure of the IS DIUR-14-1 interpreting system, requirements for standard programs, and the organization of the standard program board. It is noted that the DIUR-14-1 controller-monitor has a modular structure; the operating order of the modules in the IS DIUR-14-1 interpreting system is indicated, and a list of possible troubles in operation of the interpreting system is given. Authors' abstract.

1/1

- 42 -

USSR

UDC 615.9.092:54-162.2

BRAKHNOVA, I. T., Candidate of Medical Sciences, and BAZHENOVA, L. N.,
Institute of Labor Hygiene and Occupational Diseases and Polytechnical Institute,
Kiev

"Structure of the Crystal Lattice of Simple Substances and Compounds as an
Indicator of Their Toxicity"

Moscow, Gigiyena i Sanitariya, No 10, 1971, pp 95-100

Abstract: The structure of the crystal lattice of a substance which is determined by the nature of its electronic structure is clearly correlated with its biological activity. High toxicity is associated with a low degree of symmetry of the crystal lattice. Substances possessing a body-centered cubic lattice have little pneumoconiotic effect. Substances with a face-centered cubic lattice have a chronic general toxic effect mostly involving the parenchymatous organs. Substances with a hexagonal close-packing or other less symmetrical structures (rhombic, rhombohedral, tetragonal) are markedly toxic and can cause both acute and chronic intoxication. The characteristics of the crystal lattice of inorganic substances can be used for preliminary evaluation of the toxicity of new chemical compounds. It is recommended that the provisional maximum permissible concentration of substances with a body-centered cubic structure be set at 6 to 10 mg/m³, those with a face-centered cubic lattice 1/2

USSR

BRAKHNOVA, I. T., and BAZHENOVA, L. N., Gigiyena i Sanitariya, No 10, 1971, pp 95-100

at 3 to 5 mg/m³, and those with a hexagonal close-packing lattice at 1 to 2 mg/m³. The maximum permissible concentration of other substances with less symmetrical crystal lattices (rhombic, rhombohedral, tetragonal, monoclinic, etc.) should not exceed 0.5 mg/m³.

2/2

- 44 -

Acc. Nr.: **AP0029512**

Ref. Code: UR 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 1, pp 42-45

COMPARATIVE ASSESSMENT OF THE EFFECT PRODUCED
ON THE BODY BY SILICIDES OF THE TRANSITION METALS

L. T. Brakhnova, G. V. Samsonov

A high fibrogenic activity and dystrophic changes were detected in the parenchymatous organs of albino rats under the action of disilicides of titanium, molybdenum and tungsten. Their maximum permissible concentrations are recommended. The toxicity proved to diminish starting from titanium silicide to molybdenum and tungsten silicides; it was inversely related to the increase of static weight of stable electronic d^2 - and Sp^3 -configurations formed in the interaction of silicon atoms and transitory metal; and besides it depended on the symmetry of crystalline lattice.

97.

REEL/FRAME

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$\frac{1}{2}$ 1 2 3 4 5 6 7 8 9 10 11 12

1/3 - 029 UNCLASSIFIED PROCESSING DATE--0906170
TITLE--EMISSIVITY AND REFLECTIVITY OF ICE IN IR SPECTRUM -U-
AUTHOR--(03)-BEZVERKHNIY, SH.A., BRAMSON, M.A., MOISEYEVA, YE.V.
COUNTRY OF INFO--USSR *B*
SOURCE--IZVESTIYA AKADEMII NAUK SSSR. FIZIKA ATMOSFERY I OKEANA, VOL VI,
NO 3, 1970, PP 314-317
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ICE, IR SPECTRUM, EMISSIVITY, LIGHT REFLECTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1991/0725

STEP NO--UR/0362/70/006/003/0314/0317

CIRC ACCESSION NO--AP0110434

UNCLASSIFIED

2/3 029

UNCLASSIFIED

PROCESSING DATE--09OCT70

CERC ACCESSION NO--AP0110454

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE IR REGION OF THE SPECTRUM ICE IN SMALL THICKNESSES COMPLETELY ABSORBS THE REFRACTED FLUX AND THEREFORE FOR CASES OF PRACTICAL IMPORTANCE THE EMISSIVITY IS $E_{\gamma} = 1 - \rho_{\lambda}$, WHERE THE REFLECTION COEFFICIENT FOR UNPOLARIZED RADIATION IS DETERMINED BY THE FRESNEL FORMULA. THE COMPLEX NATURE OF THE REFRACTION COEFFICIENT OF ICE RELATIVE TO AIR IN THE IR REGION MAKES IT DIFFICULT TO USE THE FRESNEL FORMULA. ACCORDINGLY, AN ELECTRONIC COMPUTER WAS USED IN TABULATING THE COMPLEX VALUES. THE COMPLEX REFRACTIVE INDEX IS DETERMINED AS $N_{\lambda} = N_{\lambda} - iK_{\lambda}$, WHERE K_{λ} EQUALS $\frac{\alpha_{\lambda}}{4\pi}$ IS THE ABSORPTION INDEX, α_{λ} IS THE ABSORPTION COEFFICIENT, N IS THE REFRACTIVE INDEX. THE N^2 AND K^2 VALUES ARE ESSENTIALLY DEPENDENT ON WAVELENGTH AND THEIR VALUES ARE FOUND EXPERIMENTALLY. THE STUDIES OF THE RADIATION OF ICE IN THE IR SPECTRUM REVEAL THAT: 1. THE GREATEST CHANGES ARE OBSERVED WITH AN INCREASE IN THE ANGLE OF SIGHT OF THE S COMPONENT; THE P COMPONENT INCREASES TO A BREWSTER ANGLE ($\cos \theta \approx 1$), FOLLOWED BY A DROPOFF, BUT SLOWER THAN FOR THE UNPOLARIZED FLUX OR THE S COMPONENT. 2. THE UNPOLARIZED RADIATION IN THE SIGHTING ANGLES FROM 0 TO 40 DEGREES AND THE P COMPONENT IN THE RANGE FROM 0 TO 60-70 DEGREES ARE EXTREMELY CLOSE TO UNITY. THE GREATEST SPATIAL STABILITY IS EXHIBITED BY THE P COMPONENT OF RADIATION IN THE RANGE OF CHANGE OF SIGHTING ANGLES $\psi \pm 10-15$ DEGREES. 3.

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3/3 029

UNCLASSIFIED

PROCESSING DATE--09UCT70

CIRC ACCESSION NO--AP0110454

ABSTRACT/EXTRACT--THE SPECTRAL VARIATION OF THE EMISSIVITY OF ICE IS CHARACTERIZED BY THE PRESENCE OF EXTERNAL POINTS, FOR THE MOST PART CORRESPONDING TO THE SIMILAR N LAMBDA AND CHI LAMBDA MAXIMA AND MINIMA. HOWEVER, THE EXTREMA ARE MANIFESTED CONSIDERABLY MORE WEAKLY, PARTICULARLY FOR LARGE SIGHTING ANGLES. 4. THE SHARPEST CHANGES ARE EXHIBITED BY THE SPECTRAL CHARACTERISTICS OF THE P COMPONENT OF REFLECTION NEAR BREWSTER ANGLES SO SMALLER THAN PSI SMALLER THAN 60DEGREES. SINCE THE BREWSTER ANGLE IS ALSO A SELECTIVE CHARACTERISTIC, THEN P LAMBDA YIELDS 0 FOR DIFFERENT WAVELENGTHS FOR DIFFERENT VALUES OF THE PSI ANGLE. AS A RESULT, THE SHAPES OF THE SPECTRAL CURVES ARE IMPAIRED AND ADDITIONAL MAXIMA AND MINIMA APPEAR ON THE CURVES PSI EQUALS 50 AND 60DEGREES. THERE IS A RELATIVE COINCIDENCE OF THE SPECTRAL DISTRIBUTION OF EMISSIVITY AND REFLECTIVITY OF ICE AND WATER. HOWEVER, THE QUANTITATIVE DIFFERENCE ARE CONSIDERABLE, PARTICULARLY IN THE LONGWAVE PART OF THIS SPECTRAL REGION.

UNCLASSIFIED

AR0044735

BRANCHEVSKIY L. L.
 (C) BIOLOGICAL ABSTRACTS 1-70 PR 0000

2647. BRANCHEVSKIY, L. L. Vliyaniye amilnitrila na fenomen salureza, soprovozhdayushchii ostruyu ishemiyu miokarda i okklyuziyu karotid. [The effect of amyl nitrite on the phenomenon of saluresis accompanying acute myocardial ischemia and carotid occlusion.] TR KUIBYSHEV MED INST, 43: 40-46, 1967. Translated from REF ZH OTD VYP FARMAKOL KHIIMIOTER SREDSTVA TOKSIKOL, 1968, No. 11.54.364.--Acute experimental ischemia of the myocardium and constriction of both carotid arteries in dogs for 20 min caused a change in diuresis and an increase in the excretion of Na and K. These changes in kidney function are related to an increase in the peripheral resistance of the vessels, and with changes in the blood pressure (pressor effect). In the absence of the pressor effect under experimental conditions, no intensification of saluresis was noted. Inhalation by the animal of amyl nitrite (I) for 20 min with occlusion of both carotid arteries somewhat reduced the usual saluretic and pressor effect. The inhalation of I with acute ischemia of the myocardium reduced saluresis and its appearance was delayed.--J. G. S.

19771482

USSR

UDC: 51

BRANDMAN, E. I.

"On Some Methods of Solving Problems in Long-Range Intrasectoral Distribution of Capital Expenditures"

Tr. 4-y Zimn. shkoly po mat. programir. i smezh. voprosam, 1971, vyp. 1
(Works of the Fourth Winter School on Mathematical Programming and Related Problems, 1971, No 1), Moscow, 1971, pp 149-157 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V436)

Translation: A linear model with Boolean variables is written out. Two approaches to solution of the problem are mentioned (ordered sorting and an iterative method).

1/1

- 26 -

USSR

UDC 669.721.41

VYATKIN, I. P., KECHIN, V. A., MUSHKOV, S. V., BRANDMAN, O. I., BONDAREVA, E. P.

"Composition and Structure of Highly Pure Primary Magnesium"

Metalloved. splavov legkikh met -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 135-189 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G220)

Translation: A new procedure has been developed and introduced for purifying Mg by treating the Mg with Ti-containing additives. The dependence of the Mg structure on its composition has been studied in special samples with Ti and Be additives. The Be additive used to decrease the oxidizability of highly pure Mg does not lead to enlargement of the Mg macrograin in the presence of Ti admixture. There are 4 illustrations, 1 table, and a 7-entry bibliography.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--ADOPTION OF A FOUNDRY COMPLEX FOR REFINING AND TEEMING MAGNESIUM

U-
AUTHOR--(05)--VYATKIN, I.P., KANAYEV, I.YE., MUSHKOV, S.V., USHAKOV, V.D.,
BRANDMAN, O.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1) 53-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL REFINING, MAGNESIUM, METALLURGIC FURNACE, ELECTROLYTE,
MAGNESIUM CHLORIDE, POTASSIUM CHLORIDE, SODIUM CHLORIDE, MAGNESIUM
OXIDE, ECONOMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REFEL/FRAME--1989/0748

STEP NO--UR/0136/70/043/001/0053/0054

CIRC ACCESSION NO--AP0107290

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0107290

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TEEMING COMPLEX HAS BEEN ADOPTED FOR PRODUCTION OF PIG MG, INCLUDING A CONTINUOUSLY OPERATING FURNACE WITH SALT HEATING, ELECTROMAGNETIC CONDUCTION PUMP, AND A TEEMING CONVEYER OF DOMESTIC CONSTRUCTION. THESE PARTS ARE DESCRIBED. THE CONSTRUCTION OF THE FURNACE PRECLUDES MG FROM BEING IN CONTACT WITH THE LINING AND THE ATM., PROVIDES FOR FAST AND UNIFORM HEATING OF MG TO THE REQUIRED TEMP., AND MAKES IT POSSIBLE TO MAINTAIN THAT TEMP. WITH A MIN. OF ENERGY LOSSES. AS COMPARED TO THE LAB. FURNACE, THE COM. PROTOTYPE COULD TAKE 1.5 TIMES AS MUCH MG. THE OPERATING TEMP. OF THE ELECTROLYTE AND MG IS 700-10DEGREES; THE CURRENT IS 5 KA, AND THE VOLTAGE IS 30-40 V; THE CAPACITY FO THE HOPPER IS 6 TONS, AND THE AMT. OF THE ELECTROLYTE (MGCL SUB2 10, KCL 60-70, NA CL 10-15, AND BA CL SUB2 5-10PERCENT) IN THE FURNACE IS 13 TONS. THE TEEMING OF THE REFINED MG CAN BE CARRIED OUT DURING THE PURING IN OF THE MG RAW MATERIAL. THE ESSENCE OF THE REFINING OPERATION CONSISTS IN SETTLING DOWN OF THE FREE, OR COMBINED WITH MGO, CHLORIDE PARTICLES. IN THE REFINED MG THERE IS LESS THAN 0.003PERCENT CL PRIME NEGATIVE. DURING THE SETTLING DOWN, THE EXCESS MAT. OF FE, RELATIVE TO THE EQUIL. AMT., ALSO SETTLES DOWN. THE ADOPTION OF THE TEEMING COMPLEX MADE IT POSSIBLE TO REDUCE THE SP. CONSUMPTION OF ELEC. ENERGY BY 2.5 TIMES; IT ALSO MADE IT POSSIBLE TO REDUCE THE WASTE OF THE METAL AS WELL AS OF LABOR.

UNCLASSIFIED

USSR

UDC 669.721

VYATKIN, I. P., KECHIN, V. A., MUSHKOV, S. V., BRANDMAN, O. I., and
BONDAREVA, E. P.

"Composition and Structure of High-Purity Initial Magnesium"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 185-189, resume

Translation: A new method of refining magnesium by processing magnesium with titanium-containing additives has been developed and introduced. The composition dependence of the magnesium structure was investigated on special specimens with titanium and beryllium additions. It is shown that the addition of beryllium with a view to decreasing the oxidizability of high-purity magnesium does not affect an enlarging of the macrograin in presence of a titanium admixture. Four figures, one table, seven bibliographic references.

1/1

- 35 -

Magnesium

USSR

UDC 669.715

VYATKIN, I. P., KECHIN, V. A., BRANDMAN, O. I., and MUSHKOV, S. V.

"Variation of Iron Content in Refining and Holding Magnesium Melts in Industrial Furnaces"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 47-48

Abstract: A study was made of the variation of iron content in magnesium melts. It is noted that the variation of iron content probably depends not only on the magnesium cooling rate, but also on its state and on the nature of impurities. The dispersion of iron content in magnesium in SMT-1 furnaces is explained by the wide range of magnesium temperature variation and the related iron solubility in magnesium. The magnesium temperature stabilization in continuous refining furnaces with capacities of 6 to 15 tons of Mg made it possible to obtain a constant iron content in magnesium.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ULTRA HIGH FREQUENCY PLASMA MULTIPLIER WITH EXTERNAL IGNITION -U-
AUTHOR--(04)-BRANDT, A.A., REZNIKOV, I.I., BOVIN, S.V., TIKHOMIROV, YU.V.
COUNTRY OF INFO--USSR **B**
SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. (USSR), NO. 2, P. 235-6
(1970)
DATE PUBLISHED-----7C

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ULTRAHIGH FREQUENCY, PLASMA BEAM, FREQUENCY MULTIPLICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD7C/605029/D02 STEP NO--UR/0188/70/000/002/0235/0236
CIRC ACCESSION NO--AP0141/16
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0141716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF MEASUREMENTS OF
PARAMETERS OF A PLASMA FREQUENCY MULTIPLIER WITH AN EXTERNAL DIRECT
CURRENT IGNITION. THE OUTPUT POWER AND HARMONIC CONTENT ARE
INVESTIGATED.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF SURFACE ACTIVE AGENTS ON THE HYDROGEN ION DISCHARGE
REACTION ON ZINC, COPPER, AND ANTIMONY ELECTRODES IN SULFURIC ACID
AUTHOR--(02)-KIRYAKOV, G.Z., BRANDT, A.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 70-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN ION, SURFACE ACTIVE AGENT, ELECTRODE POTENTIAL,
SULFURIC ACID, COPPER, ANTIMONY, ZINC, ELECTRODE DESIGN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1264 STEP NO--UR/0360/70/020/002/0070/0072
CIRC ACCESSION NO--AP0136670
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF SOME SURFACE ACTIVE
ACETYLENE DERIVS. (ESP. THOSE WITH UNSYM. STRUCTURE) TO 2N H SUB2 SO
SUB4 SOLNS. IS FOLLOWED BY AN INCREASE OF H OVERVOLTAGE ON CU AND SB
CATHODES AT 25DEGREES. THE H OVERVOLTAGE ON ZN REMAINS PRACTICALLY
UNCHANGED. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CALCULATION OF NONISOTHERMAL DESORPTION WITH A HEAT SUPPLY -U-
AUTHOR--(03)--BRANDT, B.B., VERANYAN, R.S., LEBEDEV, O.L.
COUNTRY OF INFO--USSR
SOURCE--TEOR. OSN. KHIM. TEKHNOL. 1970, 4(2) 196-203
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CALCULATION, DESORPTION, POTASSIUM CARBONATE,
MONOETHANOLAMINE, SOLVENT, VAPOR PRESSURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1584 STEP NO--UR/0455/70/004/002/0196/0203
CIRC ACCESSION NO--AP0112578
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0112578
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL METHOD IS GIVEN FOR THE
CALCN. OF COUNTER CURRENT NONISOTHERMAL DESORPTION OF GAS FROM SOLNS.
CONTG. A NONVOLATILE ABSORBING AGENT (E.G. K SUB2 CO SUB3,
MONCETHANGLAMINE). THE EFFECTIVE TEMP. IN DIFFERENT CROSS SECTIONS OF
THE APP. AND THE MEAN DEVIATION OF THE SOLVENT VAPORS PARTIAL PRESSURE
FROM THE EQUIL. PRESSURE WERE CONSIDERED. FORMULAS AND DIAGRAMS ARE
GIVEN FOR THE OPTIMALIZATION OF THE PROCESS CONDITIONS WITH RESPECT TO
MIN. HEAT CONSUMPTION. THE ANAL. OF THE RECOVERY OF AQ. SOLN. OF
NOMUETHANOLAMINE SATD. WITH CO SUB2 IS PRESENTED AS AN EXAMPLE.

UNCLASSIFIED

USSR

UDC 513.736.3

BRANDT, I. S. (Moscow)

"Some Properties of Surfaces With Slowly Varying Negative External Curvature in a Riemannian Space"

Moscow, Matematicheskiy Sbornik, Novaya Seriya, Vol 83, No 2, Oct 70, pp 313-324

Abstract: The article considers surfaces of negative external curvature in a Riemannian space with nonpositive curvature. It is proved that on a surface which is complete in the sense of the intrinsic metric the following inequality takes place:

$$\sup_x \left\{ \left| \operatorname{grad} \frac{1}{k} \right| + \frac{\Lambda - \lambda}{2k^2} \right\} = q > \frac{1}{\sqrt{3}},$$

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USSR

BRANDT, I. S., Matematicheskiy Sbornik, Novaya Seriya, Vol 83, No 2, Oct 70, pp 313-324

where Σ is the complete surface of negative external curvature $K_e (K_e < 0)$ lying in the space R of nonpositive Riemannian curvature, $k = \sqrt{-K_e}$, Λ and λ are the maximum and minimum of the Riemannian curvature of the space R at the point of the surface Σ where the quantity k is calculated. This theorem is a generalization of N. V. YEFIMOV's theorem on q -metrics. It is shown that further significant generalization of this theorem, similar to what occurred in the Euclidean case, is impossible in a Riemannian space. An example is given of a complete surface of negative external curvature and the enveloping space of nonpositive curvature, for which $q = 4.5$.

2/2

- 23 -

1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DATA ON ANALYSES OF STANDARD GEOCHRONOLOGICAL SAMPLES -U-

AUTHOR--(05)--AFANASYEV, G.D., BRANDT, S.B., BAGDASARYAN, G.P., GURKHOV,
I.M., GUKASYAN, R.KH.
COUNTRY OF INFO--USSR

B

SOURCE--IZV. AKAU. NAUK SSSR, SER. GEOL. 1970, (4), 104-11

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHRONOLOGY, POTASSIUM ARGON DATING, LEAD ISOTOPE, ABSOLUTE
AGE, EARTH CRUST AGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0411

STEP NO--UR/0011/70/006/004/0104/0111

CIRC ACCESSION NO--AP013/502

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0137502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE GIVEN ON ANAL. OF
GEOCHRONOL. STDS. OF THE SOVIET UNION FOR K-AR AND RB-SR METHODS AND
SEVERAL MINERALS OF PRECAMBRIAN PEGMATITE USES AS STD. FOR THE Pb
ISOTOPIC METHOD OF ABS. AGE DETN. THEY SHOWED A GOOD AGREEMENT WITH
CONTROL ANAL. MADE IN VARIOUS LABS. OF THE U.S.S.R. AND BY THE LAB. AT
BERN, SWITZERLAND. THE RESULTS OF STUDY OF GEOCHRONOL. STD. BY VARIOUS
METHODS INDICATE THAT THE VALUES OF CONSTS. OF PRIME40 K AND PRIME87 RB
DECAY APPROVED BY 13 SESSIONS OF THE COMMISSION ON ABS. AGE DETN. (FOR
K: $\lambda_{K40} = 0.0557 \times 10^{-10}$ PER YEAR AND
 $\lambda_{K40} = 0.472 \times 10^{-10}$ PER YEAR; FOR RB
 $\lambda_{RB87} = 1.39 \times 10^{-11}$ PER YEAR), SHOULD BE USED
IN PRACTICAL WORK UNTIL MORE CERTAIN VALUES FOR THESE CONSTS. ARE DETD.
EVERY WORK ON THE ABS. AGE DETN. SHOULD BE ACCOMPANIED BY PRIMARY ANAL.
DATA ON THE CONTENT OF PARENTAL AND DERIVATED DECOMP. PRODUCTS AND BY
THE VALUES OF CONSTS. USED DURING AGE CALCN. FACILITY: INST.
GEOL. KUD. MESTOROSHOV, PETROGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--2/NOV70
TITLE--STATE AND PERSPECTIVES OF RADIOLOGIC STUDIES --U-

AUTHOR--(03)-AFANASYEV, G.D., BRANDT, S.B., GARRIS, M.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR. SER. GEOL. 1970, (4), 69-84

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, NUCLEAR SCIENCE AND
TECHNOLOGY

TOPIC TAGS--NUCLEAR GEOPHYSICS, RADIOACTIVE DECAY, GEOLOGY, POTASSIUM
ARGON DATING, RADIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3006/0568

STEP NO--UR/0011/70/000/004/0069/0084

CIRC ACCESSION NO--AP0137653

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS PRESENTED WITH 35
REFS. IT INCLUDES THE DATA ON CONSTS. OF RADIOACTIVE DECAY, CHARACTER
OF GEOL. INFORMATION OBTAINED BY K-AR DATING AS DEPENDENT ON
GEOSTRUCTURAL ENVIRONMENT, AND PLOTTING OF ISOCHRON FOR RB-SR METHOD AND
CONCORDANCE CURVE FOR U-PB METHOD. FACILITY: INST. GEOL. RUD.
MESTOROZHD., PETOGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 009
TITLE--TANNING OF LEATHER --U-- UNCLASSIFIED PROCESSING DATE--30OCT70
AUTHOR--(03)--YAREMCHUK, N.A., LEVITAS, I.E., BRANDYBURA, I.M.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 264,601
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TANNING MATERIAL, LEATHER, PATENT, FORMALDEHYDE, UREA,
CHROMIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1087 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0116553
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0116553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO EXCLUDE THE SOFTENING PROCESS AND IMPROVE LEATHER QUALITY, IT IS TANNED BY DECALCIFYING AND WASHING; THEN THE CLEAN RAW HIDES ARE TANNED WITH CR SALTS IN THE PRESENCE OF HCHO CONDENSATION PRODUCTS OF THE HYDROLYZATE OF COLLAGEN, UREA, AND NH SUB4 SALTS. FACILITY: LVOV POLYTECHNIC INSTITUTE.

UNCLASSIFIED

USSR

UDC 531.1

BRANETS, V. N. and SHMYGLEVSKIY, I. P.

"A Kinematic Problem of Orientation Within a Rotating System of Coordinates"

Moscow, Mekhanika Tverdogo Tela, No 6, Nov-Dec 72, pp 36-43

Abstract: The conditions of stability of the process of orientation in a rotating system of coordinates are investigated. A study is made of the kinematic problem of orientation, it being assumed that control is obtained due to a change of the angular-velocity components of the oriented system of coordinates. An investigation is made of the processes of transformation when the operation is conducted on the basis of two control signals. 3 references.

1/1

USSR

UDC: 531.36

BRANETS, V.N. and SHMYGLEVSKIY, I.P., Moscow

"Application of Quaternions to Solid Body Position Control Problems"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 4,
Jul/Aug 72, pp 24-31

Abstract: The kinematic problem of bringing a certain system of coordinates to the reference system of coordinates by imparting a certain correction angular velocity to the former is considered. The object of the article is to establish the control methods to achieve the correction process and also to establish the control stability. The Rodrig-Hamilton parameters are used as the quaternion components. It is shown that the quaternions can be used directly as control signals. Also it is convenient to use the quaternions as criterions of correction process stability.

1/1

USSR

BEZHKO, A. P., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 123-134

this case, and for this reason the Rodrig-Hamilton parameters are advantageous. These parameters do not degenerate for any position of the solid state and they are convenient for use in a control system; there is only one coupling equation when these parameters are used, which simplifies the numerical solution of the kinematic equations. Use of the quaternions follows from use of the Rodrig-Hamilton parameters.

2/2

USSR

BEZHKO, A. P., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 123-134

"Application of Quaternions in the Theory of Finite Rotation of a Solid State"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 123-134

Abstract: In this article the basic results of the theory of finite rotation of a solid state obtained in the form of formal operations on hypercomplex numbers (quaternions) are presented. New results are obtained for the addition formulas of finite rotations defined by the Rodrig-Hamilton parameters. A generalization of the known theorems of finite rotation theory is presented, and the correctness of the form of addition of rotations when summing relative motions is demonstrated. The application of quaternions makes it possible easily to obtain all the basic results of the theory of finite rotations and, in addition, to describe the position of the solid state in terms of nondegenerate kinematic parameters.

In a number of problems the angular position of the solid state is defined by solving the kinematic equations on a digital computer. The selection of the kinematic parameters affects the calculations significantly in

1/2

USSR

BRANOVER, G. G. and TSINOBER, A. B., *Magnitnaya Gidrodinamika Neszhimayemykh Sred*, Moscow, 1970

3. Plane-Parallel Even Flow in a Transverse Magnetic Field	44
4. Flow in a Rectangular Pipe.	48
5. Flow in a Circular Pipe	62
6. Flow in a Pipe with Rough Walls in the Presence of a Transverse Magnetic Field.	65
7. Some Notes on the Thermal Problem of Magneto-Hydrodynamic Laminar Flow of a Melted Metal in a Pipe.	76
Bibliography.	78

Chapter III. Instability of Laminar Flow and Transition to Turbulence in the Presence of a Magnetic Field	81
1. Effect of Magnetic Field on Flow Perturbations.	81
2. Planar Flow in a Transverse Magnetic Field (Hartman Flow)	88
3. Axisymmetrical and Planar Flow in a Longitudinal Field.	97
4. Flow in Rectangular and Circular Cross-section Pipes in Transverse Magnetic Field.	106

2/8

USSR

BRANOVER, G. G., and TSINOBER, A. B., *Magnitnaya Gidrodinamika Neszhimayemykh Sred*, Moscow, 1970

5. Some Information on Stability of Other Types of Flow in a Transverse Field	115
6. The Influence of Finite Perturbations on the Transition to Turbulence in Magneto-Hydrodynamic Flows	120
Bibliography	123
Chapter IV. Turbulent Flows in Pipes in the Presence of Transverse and Longitudinal Magnetic Fields	
1. Principal Concepts of Turbulent Flow in a Magnetic Field	128
2. Semi-empirical Theories of Turbulent Flow in Pipes in the Presence of a Magnetic Field	129
3. Consideration of the Influence of the Magnetic Field on Turbulent Flow By Means of Mixing a Path	134
4. Solution of Differential Equations of Motion for Various Cases of Turbulent Flow in External Magnetic Field.	137
5. Plane-Parallel Turbulent Flow in Plane of Transverse Magnetic Field (Hartman Turbulent Flow)	140
6. Planar and Axisymmetrical Flow in Longitudinal Magnetic Field. Planar Flow in Plane Perpendicular to Transverse Magnetic Field.	148

3/8

USSR

BRANOVER, G. G., and TSINOBER, A. B., *Magnitnaya Gidrodinamika Neszhimayemykh Sred*, Moscow, 1970

Chapter VI. Magneto-Hydrodynamic Stokes and Oseen Flows.	208
1. Limits of Applicability of Stokes Approximation	208
2. Uniqueness of Solution of the Problem of Stokes Flow	209
3. Fundamental Solution	213
4. Absence of Stokes Paradox in Magnetic Hydrodynamics.	218
5. Green Formula and Integral Representation of Solutions	219
6. General Solution of Problem of Stokes Flow in a Half Plane	223
7. Reduction of Non-linear Problem of Flow in a Half Plane to Integral Equation	229
8. Resistance of Simple Bodies in Stokes Flow	231
9. Oseen Flow	234
10. Flow of Electrical Conducting Fluid with External Electric Current Around a Body.	239
Bibliography.	241

USSR

BRANOVER, G. G. and TSINOBER, A. B., *Magnitnaya Gidrodinamika Neszhimayemykh Sred*, Moscow, 1970

Chapter VII. Magneto-Hydrodynamic Boundary Layer	243
1. Preliminary Notes.	243
2. Magneto-Hydrodynamic Boundary Layer on Flat Plate.	244
3. Flow in Wake Beyond Body in Transverse Magnetic Field.	259
4. Flow in the Initial Sector of a Pipe with Transverse Magnetic Field.	261
Bibliography	267
Chapter VIII. Results of Numerical Calculations of Problems on Magneto-Hydrodynamic Flow Around Bodies.	269
1. Preliminary Notes.	269
2. Flow Around Circular Cylinder in Transverse Magnetic Field	269
3. Flow Around Flat Plate of Finite Width in Transverse Magnetic Field.	273
Bibliography	276

6/8

- 75 -

USSR

BRANOVER, G. G., and TSINOBER, A. B., Magnitnaya Gidrodinamika Neszhimayemykh
Sred. Moscow, 1970

Chapter IX. Experimental Studies of Flow Around Bodies in the Presence of a Magnetic Field.		
1. Preliminary Notes.		278
2. Flow Around Bodies in the Presence of a Longitudinal Magnetic Field.		278
3. Flow Around Bodies in the Presence of a Transverse Magnetic Field.		279
4. Flow in the Wake Beyond a Body		281
5. Flow Around Sensing Elements of Measuring Devices.		293
Bibliography		297
Chapter X. Streams in a Magnetic Field		301
1. Some General Notes on Laminar and Turbulent Streams in a Magnetic Field		304
2. Experimental Studies of Turbulent Streams Entering a Tube with Non- conducting Walls.		304
3. Experimental Studies of Turbulent Streams Entering a Tube with Two Conducting Walls Parallel to the Field.		309
4. Distribution of Pressure and Drag Factor Upon Sudden Expansion of a Stream		316
Bibliography		319
7/8		323

USSR

BRANOVER, G. G. and TSINOBER, A. B., Magnitnaya Gidrodinamika Neszhimayemykh
Sred. Moscow, 1970

Appendix I. Some Special Engineering Problems.	325
1. Preliminary Notes.	325
2. Hydrodynamic Design of a Magneto-Hydrodynamic Pump	327
3. Hydrodynamic Design of an Electromagnetic Liquid Metal Dosing Device	332
4. An Electromagnetic Tray.	334
Bibliography	338
Appendix II. Brief Outline of Hydrodynamics of Melted Metals	340
1. Areas of Application and Primary Specifics of the Flow of Melted Metals	340
2. Linear Hydraulic Resistances	345
3. Local Resistances	352
4. Physical Properties of Liquid Metals.	354
Bibliography	360
Supplement Added After Editing	362
Primary Symbols.	372
Name Index	374
Subject Index.	377

8/8

1/2 058 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SOME COMMON PROPERTIES OF MAGNETOHYDRODYNAMIC TURBULENCE IN TUBES
AND THEIR INVESTIGATION WITH THE AID OF CONDUCTION ANEMOMETERS -U-
AUTHOR-(04)-BRANOVEK, G.G., GELFGAT, YU.M., KIT, L.G., TSINOBER, A.B.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIYA NAUK SSSR, IZVESTIYA, MEKHANIKA ZHIKOSTI I GAZA,
MAR.-APR. 1970, P. 35-44
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MAGNETOHYDRODYNAMIC FLOW, TURBULENT FLOW, ANEMOMETER, MAGNETIC
FIELD EFFECT, REYNOLDS NUMBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1188 STEP NO--UR/0421/70/000/000/0035/0040
CIRC ACCESSION NO--AP0124842
UNCLASSIFIED

2/2 058

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ASSIGN NO--AP0124842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL CONSIDERATIONS CONCERNING THE MECHANISM RESPONSIBLE FOR THE SUPPRESSION MHD TURBULENCE BY A MAGNETIC FIELD. THE PRINCIPAL TENDENCIES CHARACTERISTIC OF THE REARRANGEMENT OF PERTURBED MOTION UNDER THE INFLUENCE OF A MAGNETIC FIELD ARE STUDIED ON THE BASIS OF RESULTS OF INVESTIGATIONS OF MHD TURBULENCE BY METHODS IN SPECTRAL THEORY. IT IS ASSUMED THAT TURBULENCE IS UNIFORM AND THAT THE MAGNETIC REYNOLDS NUMBER IS MUCH SMALLER THAN UNITY. THE THEORETICAL RESULTS OBTAINED ARE VERIFIED BY EXPERIMENTS PERFORMED BY MEANS OF A CONDUCTION ANEMOMETER. THE THEORY OF THIS DEVICE IS REVIEWED.

UNCLASSIFIED

USSR

UDC: 51

~~BRANOVITSKAYA, S. V.~~, GORACHEV, V. A., LOPATIN, A. P., POLOV-
NIKOV, V. S.

"Analysis of Technological Algorithms"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical
Methods of Studying and Optimizing Systems--collection of
works), Kiev, 1971, pp 71-93 (from RZh-Kibernetika, No 8,
Aug 72, Abstract No 8V584)

[No abstract]

1/1

- 47 -

USSR

UDC512.25/.26+519.3:330.115

BRANOVITSKAYA, S. V.

"Algorithm for Determination of Promising Schedules for City Passenger Transport"

Mat. Metody Issled. I Optimiz. Sistem. Vyp. 3, [Mathematical Methods of Studying and Optimizing Systems, No 3--Collection of Works], Kiev, 1970, pp59-63, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V522 by I. Romanovskiy).

Translation: A method is described similar to the method of G. V. Shelcykhovskiy (RZhMat., 1967, 6V286).

1/1

USSR

BRANOVITSKIY, V. I., RABINOVICH, E. L., Vychisl. sistemy, vyp. 48, 1971, pp 3-15

processing information (including programming information) provided in the algorithm for solution of a problem; this processing takes place after input of the initial data and the program for solution of the problem. An auxiliary processor is understood to mean a device designed for some kind of auxiliary data processing: editing input and output data, solving central control problems, etc. Computer systems are subdivided into: 1) indivisible computer facilities, and 2) systems of computers. Indivisible computer facilities are systems constructed on the basis of several processors (including auxiliary processors), none of which is capable of independent operation separate from the system. Systems of computers are computer facilities constructed on the basis of separate computers in which each of the machines making up the system is capable of autonomous operation. Each of these groups, in turn, is divided into: homogeneous systems and heterogeneous systems. A homogeneous system is defined as a computer facility made up of several identical processors (or computers), not counting auxiliary machines. A heterogeneous system is understood to mean a computer facility comprised of several processors (or computers) of different types, not counting auxiliary machines. Systems of homogeneous computers are divided into: a) systems of

2/4

- 37 -

USSR

BRANOVITSKIY, V. I., RABINOVICH, E. L., Vychisl. sistemy, vyp. 48, 1971, pp 3-15

computers with uniform software; b) systems of computers with differing software. Complexes are divided into two subclasses: a) complexes with computers oriented toward solution of problems of definite classes; b) complexes with computers oriented for different operating modes. All systems of computers are divided into two classes: multiprocessor (multicomputer) systems and single-processor systems. Single-processor systems are computer facilities with a single central processor or computer and one or more auxiliary processors (or computers which handle auxiliary data processing). On the next stage of classification, all systems are divided into two groups: with centralized access to the system by means of collectivized I/O devices; and with access to the system only through the external devices of the computers which comprise the system. The following groups of computer systems are differentiated with respect to the kinds of connections between computers (processors): 1) computer facilities with data-coupled computers (processors) in which the computers (processors) of the system can exchange only functional information; 2) computer facilities with computers (processors) connected only with respect to control. The first group is subdivided

3/4

USSR

BRANOVITSKIY, V. I., RABINOVICH, E. L., Vychisl. sistemy, vyp. 48, 1971, pp 3-15

into: oriented computer facilities if transmission of information is possible only on one side -- from one computer (processor) to another; centralized computer facilities if transmission of functional information is possible both ways; partially oriented computer facilities if the system includes both oriented and unoriented subsystems. The second group is subdivided into: directional computer facilities if control coupling is always oriented; non-directional computer facilities if control connections are unoriented. Depending on the constancy of their make-up as well as functional and controlling connections, computer facilities are divided into: 1) computer facilities with a fixed structure (if the make-up, all connections, and their orientation remain unchanged during operation of the system); 2) computer facilities with variable structure (if the make-up of the system, the functional and controlling connections, and their orientation may vary during operation of the system). Bibliography of ten titles.

4/4

- 38 -

USSR

BRANOVITSKIY, V. I., RABINOVICH, E. L.

"Problems of Classification of Computer Systems"

Vychisl. Sistemy [Computer System -- Collection of Works], No 48, Novosibirsk, 1971, pp 5-15 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V780 by V. Mikheyev).

Translation: A classification of computer systems (CS) is studied, in which three "levels," are distinguished, divided, in turn, into stages. At the first level, all CS are classified according to their interdependence, as well as their structural (and program) homogeneity. At the middle level, stages of community of various computer devices included in the system are separated. At the lower level, all computer systems are divided as a function of the connections between the devices included in their composition. A computer system refers to any set of computer devices with more than one processor (including supplementary processors), connected by information transmission lines and controlled in a centralized manner. The processor means a set of computer equipment (in the simplest case, a portion of a digital computer) designed for processing of information (including program information) as called for by problem solving algorithms; this processing occurs after the initial data and problem solving.

1/4

USSR

BRANOVITSKIY, V. I., RABINOVICH, E. L., Vychisl. Sistemy, No 48, Novosibirsk, 1971, pp 3-15.

ing algorithm are input. A supplementary processor means a device designed for supplementary processing of information, such as: editing of input and output information, solution of dispatchers problems, etc. Computer systems are divided into: 1) indivisible CS; 2) systems of computers. Indivisible CS refer to systems based on several processors (including supplementary processors), when it is impossible for any of the processors to operate separately from the rest of the system. Systems of computers refer to CS based on individual computers, when independent operation of each machine included in the composition of the system is possible. Each of these groups in turn is divided into: homogeneous systems and heterogeneous systems. A homogeneous system refers to a CS, the composition of which includes several identical processors (or computers), not including supplementary processors. A heterogeneous system refers to a CS, including several processors (or computers) of different types, not counting supplementary processors. In systems of homogeneous computers, we distinguish: a) systems of computers with homogeneous software; b) systems of computers with heterogeneous software. Complexes include two subclasses: a) complexes with computers oriented toward the performance of tasks of definite types; b) complexes with computers oriented toward

2/4

- 63 -

USSR

BRANOVITSKIY, V. I., RAGINOVICH, E. L., Vychisl. Sistemy, No 48, Novosibirsk, 1971, pp 3-15.

various operating modes. All computer systems are divided into two classes: multiprocessor (multi-machine) and single-processor systems. Single-processor systems consist of CS with central processor (or computer) and one or more supplementary processors (or machines performing supplementary information processing). In the next stage of classification, all systems are divided into two groups: with centralized access to the system through general input-output devices; with access to the system only through the computers included in the system. Systems can be divided into the following groups of computer systems according to types of connections between computers (processors): 1) CS with information connections between machines (processors), when the machines (processors) of the system can exchange only functional information; 2) CS with machines (processors) coupled only by control. The first group, in turn, is subdivided into: oriented CS, if transmission of functional information is possible only in one direction -- from one machine (processor) to another; nonoriented CS, if transmission of functional information is possible in both directions; partially oriented CS, if the system has both oriented and unoriented subsystems. The second group is divided into: directed CS, if the control couplings are always oriented; undirected CS, if the control couplings are oriented. Depending

3/4

BRANOVITSKIY, V. I., RABINOVICH, E. L., Vychisl. Sistemy, No 48, Novosibirsk, 1971, pp 3-15.

on the constancy of the composition, as well as the functional and control connections, CS are divided into: 1) CS with constant structure (if in the process of functioning of the system, its compositions, all couplings and their orientation remain unchanged); 2) CS with variable structure (if the composition in the system and the functional and control couplings, as well as their orientations, can change during the functioning of the system). 10 Biblio. Refs.

4/4

- 64 -

USSR

UDC 8.74

BRANOVITSKIY, V. I., DOVGVALLO, A. M., LOZINSKIY, L. S.

"Some Forms of the Man-Computer Dialog"

V sb. Mat. i inform. probl. prognozir. i upr. naukoy (Mathematical and Information Problems of Forecasting and Control of Science -- collection of works), Kiev, 1971, pp 184-194 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V623)

Translation: A study was made of the following problems: the interaction of man with a computer and his role in the joint solution of a problem by them: a dialogue as a form of such interaction, basic characteristics and forms of dialogues; methods of organizing a dialog controlled by a computer and its role in the development of problem-solving algorithms.

1/1

USSR

UDC 615.747/.779

MOLOZHANOVA, YE. G., REMIZOVA, L. B., and BRANTSEVICH, L. G., All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastic Masses, and Kiev State University

"Detoxification of Chlorophos by Soil Microorganisms"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 10 (120), 1973, pp 41-42

Abstract: It has been established that chlorophos may be decomposed in soil by exoenzymes of soil microorganisms. The negligible amount of the agent that remains in the soil up to two weeks may be explained by microbiological detoxification.

1/1

1/2 039 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF PLASTIC DEFORMATION AND RECOVERY ON THE MAGNETIC
PROPERTIES OF TRANSFORMER STEEL CRYSTALS -U-
AUTHOR--(05)-BRASHEVAN, G.A., VEKSLER, A.Z., DRUZHININ, V.V., MOLOTOLOV,
B.V., NOVIKOV, V.F. B
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK. SSSR, SER. FIZ. 1970, 34 (12) 322-3
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PLASTIC DEFORMATION, TRANSFORMER STEEL, METAL CRYSTAL, SHEET
METAL, MAGNETIC PROPERTY, MAGNETOSTRICTION, CRYSTAL DISLOCATION, ALLOY
COMPOSITION, METAL ROLLING, SILICON STEEL, HYDROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--1997/1529

STEP NO--UR/0048/70/034/002/0322/0328

CIRC ACCESSION NO--AP0120310

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120310

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LARGE CRYSTALS CUT OUT FROM TRANSFORMER METAL SHEET, 0.35 MM THICK, REFINED IN H (950DEGREES, 4 HR) AND UNDER VACUUM (1100DEGREES, 4 HR) WERE STUDIED. AFTER REFINING, THE STEEL CONTAINED SI 2.9, C 0.004, N 0.005, AND S 0.003PERCENT. STUDIES OF THEIR MAGNETIC STRUCTURE (BY THE POWDER METHOD), AS WELL AS OF DISLOCATION DS. WERE MADE AT THE SAME SPOT OF THE SAMPLE. SP. CORE LOSSES, COERCIVE FORCE, H SUBC, AND MAGNETOSTRICTION WERE MEASURE. ROLLING IN THE (001) DIRECTION PRODUCED A STRUCTURE WITH A MUCH LOWER DISLOCATION D. THAN ROLLING IN THE (110) DIRECTION. HOWEVER, WITH SMALL DEFORMATIONS H SUBC (001) LARGER THAN H SUBC (110). THE SIMULTANEOUS ACTION OF STRESSES AND DISLOCATION DS. LED TO A CHANGE IN DELTA H SUBC. A LINEAR CORRELATION WAS NOTED BETWEEN H SUBC AND SP. CORE LOSSES. FACILITY: TSNICHM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 66.085.3/.5:678.742.2

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P'YANKOV, G. N., KABAKCHI, A. M., GOLODNYI, YU. F., BRASHKIN, M. A., LOPATIN, I. P., YARMILKO, YE. G., and BORDIKOVA, A. N., Institute of Physical Chemistry, Acad. Sc. UkrSSR

"Experimental Line for the Production of Radiation Modified Polyethylene Tubes UR-0.4T"

Kiev, Khimicheskaya Tekhnologiya, No 2 (62), Mar-Apr 72, pp 50-52

Abstract: An experimental line has been constructed for the production of radiation modified polyethylene tubes. The novelty of this process is in the irradiation method. The tubes pass repeatedly through the irradiation zone in a spiral pattern, with alternating directions of the rotation, so that exposure is uniform to the radioactive source, and damage due to the radiation heat is minimal. As an example, a tube 6 mm in diameter, wall thickness up to 0.5 mm, moving at a velocity of 2m/min, after 6 passages through the chamber picks up a dose of 45 Mrads.

1/1

USSR

UDC 51

BRASLAVETS, M. YE., KRAVCHENKO, R. G.

"Mathematical Simulation of Economic Processes in Agriculture. Textbook for the Departments of Economic Cybernetics of the Agricultural Institutions of Higher Learning"

Matematicheskoye modelirovaniye ekonomicheskikh protsessov v sel'skom khozyay-
stve. Uchebnik dlya fak. i otd. ekon. kibernet. s.-kh. vuzov. (cf. English
above), Moscow, Kolos, 1972, 589 pp, ill., 1 r. 56 k. (from RZh-Kibernetika,
No 12, Dec 72, Abstract No 12V404K)

No abstract

1/1

- 42 -

USSR

UDC: 624.131.43+539.21.084-492.3

VUL'F, A. R., BRATAYCHUK, A. I., GORBANOV, A. S., VOLYNSKIY, V. V.

"Experimental Studies of the Interaction between Piles and Horizontally Moving Ground"

Sb. Nauchn. tr. Gos. proyekt. i n.-i. in-t Donetsk PromstroyNIIproyekt
(Collection of Scientific Works of the Donetsk PromstroyNIIproyekt State
Scientific Research and Planning Institute), 1970, No 9, pp 170-174 (from
RZh-Mekhanika, No 9, Sep 70, Abstract No 9V570)

Translation: This paper gives the results of experimental studies of the interaction between a piling and the soil into which it is driven, where the soil moves horizontally. A description is given of the construction of a stand which simulates the conditions of lateral pressure of the soil on a piling when the head is securely fastened in a grillage foundation. Expressions are derived for the contact stresses on the lateral surface of the piling at various depths, and deflections of the piling as functions of the soil pressure and the magnitude of its compression with respect to the length of the piling. A basis is given for application of the Winkler model to calculation

1/2

- 49 -

USSR

VUL'F, A. R., et al., Sb. Nauchn. tr. Gos. proyektu. i n.-i. in-t Donetskiv
PromstroyNIIproyekt, 1970, No 9, pp 170-174

of a piling in the case of lateral pressure, and studies are carried out in this connection on the change in the bed factor with depth where there is lateral pressure, using a special installation, and the corresponding relationship is found. Authors' abstract.

2/2

USSR

UDC: 539.166.074

BRATANOVSKIY, V. V., GENERALOVA, V. V., GURSKIY, M. N., and TYLTAYEV, A. V.

"Metrologic Verification of the State of Measuring Gamma-Radiation Doses in the $1 \cdot 10^3$ - $10 \cdot 10^8$ Rad Interval With Liquid Chemical Detectors"

V sb. Dozimetriya i radiats. protsessy v dozimetr. sistemakh (Dosimetry and Radiation Processes in Dosimetric Systems -- collection of works), Tashkent, "Fan", 1972, pp 100-103 (from RZh-32. Metrologiya i Izmeritel'naya Tekhnika, No 5, 1973, Abstract No 5.32.1321)

Translation: The metrologic verification of the state of measuring gamma-radiation doses in the $1 \cdot 10^3$ - $10 \cdot 10^8$ rad interval with liquid chemical detectors showed that nearly one fourth of the digital values of an exposure dose diverge with the assigned value to magnitudes which exceed the measurement error. The number of overestimated results is nearly twice that of the underestimated. This attests to the presence of systematic error. Ways of improving the state of measuring gamma-radiation doses are indicated. Original article: one illustration and one table.

1/1

- 139 -

3

USSR

DEKASH, V. I., et al. *Technical Institute of the Academy of Sciences, USSR*

"On the Spectral Properties of Zinc in the Liquid Phase"

Moscow, *Izvestiya Akademiya Nauk SSSR, Seriya Khimicheskaya*, 1976, p. 1271

Abstract: The UV spectrum of zinc in the liquid phase is studied. The absorption maximum is assigned. The spectra of zinc in the liquid phase (a) and in the vapor (b). The intensity of the UV spectrum in the liquid phase is significantly lower than in the vapor phase. This indicates an increase in the intensity of the character of the spectrum due to the presence of a Zn vacancy. The data seem to indicate that the Zn vacancy in the liquid phase is a photoionized center and the capture of electrons pertaining to the formation of sulfur.

1-1

Acc. Nr.
AP0105560Abstracting Service
CHEMICAL ABST. **B**

Ref. Code

Ufn343

127137s Electron paramagnetic resonance in lattice defects in synthetic diamonds. Bratashevskii, Yu. A.; Litvin, Yu. A.; Samsonenko, N. D.; Sobolev, E. V. (Donets. Fiz.-Tekh. Inst., Donetsk, USSR). Izv. Akad. Nauk SSSR, Neorg. Mater. 1970, 6(2), 368-9 (Russ). A new type of EPR spectra obtained in nonirradiated synthetic diamonds is discussed. In synthetic diamonds which had been synthesized with various amts. of solvents (Ni, Co, Mn, Fe, Cr) present, at $<150^\circ$, a spectrum is obsd. consisting of a central narrow isotropic line with one and the same g -factor, equal to 2.0324, and of 2 satellites with the very same g -factor and a distance between them of 2.7 Oe. The intensity of the spectrum significantly increases for those diamonds, which have probably been grown at a higher rate. A similar spectrum has not been obsd. in nonirradiated natural diamonds. These facts make one assume that this spectrum is caused by lattice defects arising during growth of these crystals. The most probable defect can be interstitial C atoms, the concn. of which can increase with increasing growth rate of the diamonds. The presence of the 2 satellite lines can be assocd. with the hyperfine interaction between electrons with unpaired spins. There is absence of anisotropy in the g -factor because the deformation of the surrounding cell by virtue of the Jahn-Teller

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effect is of a dynamic nature; it proceeds at a rate which is significantly higher than the spin relaxation rate, as a result of which a slight averaging of the g-factor is obsd. exptl.

S. A. Mersol

LLB

19880577

USSR

UDC 621.397.778.534.2

BRATCHENKO, V.N., and ALEKSEYEVA, N.V.

"The Connection Between Subtractive and Colorimetric Color Coordinates"

Moscow, Tekhnika Kino i Televideniya, No 7, Jul 72, pp 38-43

Abstract: The establishment of a quantitative connection between color separation and standard colorimetric characteristics is discussed. A transition method from color separation to colorimetric characteristics is suggested by which the characteristics of standard colors are calculated according to known color separating data. Functional coefficients for a simplified calculation of color coordinates were determined. It is demonstrated that the errors in calculating colorimetric characteristics from simplified formulas do not exceed 2-3 color thresholds. A method of comparing different systems by color separating characteristics was developed, included are systems with taking the logarithm of primary signals and their subsequent linear transformation. This method makes it possible to compare the color reproduction of real systems for which the correct spectral characteristics are unknown, but the experimentally determined color separating characteristics are known. Three illustr., one table, twenty formulas, four biblio. refs.

1/1

- 110 -

USSR

UDC: 8.74

BALUYEV, A. N., BRATCHIKOV, I. L.

"Some Peculiarities of the Intermediate Translation Language of ALGOL-68"

Teoriya Yazykov i Metody Postroyeniya Sistem Programmir. [Theory of Languages and Methods of Construction of Programming Systems], Kiev-Alushta, 1972, pp 391-396 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V553, by V. Mikheyev)

Translation: The structure of an arbitrary machine is studied to determine some of the peculiarities of the intermediate translator language of ALGOL-68. The result of translation of the program from ALGOL-68 to the intermediate language is a program for an arbitrary machine. It has the following parts: 1) the program itself; 2) the table of identifiers; 3) the table of routines; 4) special tables (table of connections with input program, etc.). The program itself is a sequence of instructions for the arbitrary machine. Each instruction consists of the operation and operand parts. The operands are divided into explicit and implicit. An explicit operand may be only a value of an identifier or a label marking one of the instructions of the arbitrary machine. An explicit operand identifier indicates a reference to a corresponding line.

1/2

USSR

Baluyev, A. N., Bratchikov, I. L., Teoriya Yazykov i Metody Postroyeniya Sistem Programmir., Kiev-Alushta, 1972, pp 391-396

in the table of identifiers. An implicit (understood) operand may be one or more values at the top of the service register, or the value in the service register of the arbitrary machine (for example, at the top of the service register). The nature of the instructions of the arbitrary machine is such that running of the program can be reduced to successive performance of instructions of the program itself in the sequence in which they occur, broken only by jumps called for by explicitly indicated original or service tags. The table of identifiers for translation from ALGOL-68 to the intermediate language is only partially filled. A table of routines is completely formed upon translation of the program to the intermediate language. During operation of the arbitrary machine, it does not change. Each row of this table contains the equivalent of a certain terminal generation of the metaconcept TYPE. In case of a multiple value, a row may contain additional information on the properties of the boundaries necessary to check the agreement of the formal and actual parameters. The connection table to the input program is also fully formed upon translation to the intermediate language.

2/2

USSR

UDC 8.74

BRATCHIKOV, I. L.

"A Procedure for Formal Description and Analysis of the Context Conditions of ALGOL-60 Type Languages"

V sb. Teoriya yazykov i metody postroyeniya sistem programir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 381-390 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V441)

Translation: A study was made of some classes of grammars represented in the form of context-free grammars with restrictions on the output. They permit formal assignment of a number of the context conditions used when describing the syntax of the ALGOL-60 type language. The characteristic features of this approach to the formal description of context conditions are as follows: 1) simplicity of constructing a grammar of the proposed type; 2) possibility of utilizing the methods already developed for context-free grammars.

1/1

1/2 041 UNCLASSIFIED
TITLE--COMBUSTION IN A SINTERING LAYER -U- PROCESSING DATE--04DEC70
AUTHOR--(04)-BRATCHIKOV, S.G., GROSHEV, M.YA., KHUDORUZHKOV, I.P.,
TUMASHEV, V.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 46-50
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS, MATERIALS
TOPIC TAGS--IRON ORE, SINTERING FURNACE, COMBUSTION KINETICS, CARBON,
CARBON DIOXIDE, GAS ANALYSIS, COMBUSTION TEMPERATURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0803 STEP NO--UR/0148/70/013/004/0046/0050
CIRC ACCESSION NO--AT0132901
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMONG THE COMPLEX PROCESSES GOING ON DURING SINTERING OF AN IRON ORE BATCH, THE COMBUSTION OF C AND THE REDN. OF FE OXIDES ARE SIGNIFICANT. BOTH PROCESSES EXERT AN EFFECT ON THE COMPN. OF THE GAS PHASE. THE COMBUSTION OF FUEL IN THE LAYER DILD. BY INERT MATERIAL WAS INVESTIGATED 1ST. THE CHANGE IN THE GAS COMPN. IN THE O ZONE IS ANALOGOUS TO THE CHANGE IN THE GAS COMPN. DURING THE COMBUSTION OF THE FUEL IN A DENSE LAYER WITHOUT INERT MATERIALS BEING PRESENT. THE INTERACTION BETWEEN C AND THE GAS TERMINATES SOONER THAN THE REDN. REACTION OF CO SUB2 GAS DEVELOPS. THE COMBUSTION OF C IN THE LAYER OF A BATCH CONTG. FE OXIDES IS ACCOMPANIED BY OXIDN. REDN. REACTIONS, THE EFFECT OF WHICH ON THE COMPN. OF THE GAS AT VARIOUS C YIELDS IS KNOWN. AT LOW C CONSUMPTION, FAVORABLE CONDITIONS ARE CREATED FOR THE OXIDN. OF LOWER FE OXIDES OF THE BATCH, AS A RESULT OF WHICH A LOSS IN CO SUB2 CAN TAKE PLACE. IF FE₂O₃ IS NOT PRESENT IN THE BATCH, THEN THE COMPN. OF THE GAS IS STABILIZED. DECREASING THE FUEL CONTENT IN THE BATCH RESULTS IN A DECREASE IN THE TOTAL SURFACE OF INTERACTION OF C AND O. THE START OF COMBUSTION DOES NOT ALWAYS COINCIDE WITH THE INSTANT OF ATTAINMENT OF THE TEMP. CORRESPONDING TO THE INFLAMMATION POINT OF THE SOLID FUEL. A COINCIDENCE IS OBSD. ONLY AT LOW C CONTENTS (LESS THAN OR EQUALS TO 3.0-3.3PERCENT) IN THE BATCH. AT HIGHER C CONTENTS (4.0-5.0PERCENT), THE COMBUSTION COMMENCES LATER. TO THE LOW C CONTENT CORRESPONDS A HIGHER CONTENT OF RESIDUAL O IN THE GAS. UNDER THESE CONDITIONS, THE COMBUSTION OF THE FUEL COMMENCES AT LOWER TEMPS.

FACILITY: URAL. POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC: 620.197.670.193

B

GERASIMOV, V. V., PAVLOVA, F. S., KUZNETSOVA, V. N., and BRATCHIKOV, V. N.

"Effect of Protective Metallic Coatings on the Corrosion Cracking of Stainless Steel"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 420-424

Abstract: In a steam-air medium at about 100°C, OKh18N10T steel may become subject to corrosion cracking. The objective of this study was to determine an optimum coating providing long-term protection of OKh18N10T steel against corrosion cracking at high temperatures in steam and steam-air media containing chlorides. The coatings tested were aluminum, nichrome, and alumei. Specimens spray-coated with aluminum exhibited the highest electrochemical protection of the steel. Annealing the aluminum coating at 510, 700, and 870°C increases corrosion cracking resistance at least twofold. However, a heavy (over 3 microns) and brittle layer of intermetallic compounds which is formed in the process of heat treating the aluminum coating at temperatures above the melting point of aluminum appears to fail even at minor deformations. The cracks which result in the aluminum layer impair the protective properties of the coating against those provided by a 510°C annealing.

1/1

1/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--STABILIZATION OF 1,1,1,TRICHLOROETHANE -U-

AUTHOR--(03)-BRATOLYUBOV, A.S., ALESHINA, G.F., TSIBULSKAYA, G.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,381

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL STABILITY, CHLOROETHANE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3007/0845

STEP NO--UR/0492/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136279

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136279

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHYLCHLOROFORM IS STABILIZED BY
ADDING GUAIACOL, NITROANISOLE, OR THEIR MIXT. (30-50PERCENT
NITROANISOLE) IN A QUANTITY OF 3-5PERCENT.

UNCLASSIFIED

.1/2 : 035

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--PHOTOCHEMICAL CHLORINATION OF METHYLENE CHLORIDE USING LIGHT
FILTERS -U-

AUTHOR--BRATOLYUBOV, A.S., VASILKOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGARD) 1970, 43(1), 199-202

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, CHEMICAL REACTION RATE, METHANE, METHYL
CHLORIDE, FILTRATION, PHOTOSYNTHESIS, RADIATION EFFECT/(U)PRK2
RADIATION LAMP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1987/1218

STEP NO--UR/0080/70/043/001/0199/1202

CIRC ACCESSION NO--AP0104584

UNCLASSIFIED

2/2 * 035

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104584

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CHLORINATION WAS CARRIED OUT IN A CONTINUOUS FLOW 27 TIMES 400 MM REACTOR KEPT AT MINUS 30DEGREES AND IRRADIATED BY A PRK-2 LAMP. THE PRODUCTS WERE WASHED WITH 1PERCENT NAOH, DRIED WITH K SUB2 CO SUB3, AND ANALYZED BY GAS LIQ. CHROMATOG. AND IODOMETRY. THE DEGREE OF CHLORINATION DEPENDED ON THE MATERIAL OF THE REACTOR AND FILTER AND DECREASED IN ORDER: QUARTZ, PYREX, MOLYBDENUM GLASS.

UNCLASSIFIED

0123

1/2 013 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--PHOTOCHEMICAL CHLORINATION OF 1,1-DICHLOROETHANE -U-
AUTHOR--(02)--BRATOLYUBOV, A.S., ALESHINA, G.F. B
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3) 651-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHLORINATION, CHLOROETHANE, CHEMICAL REACTOR, PHOTOCHEMISTRY,
CHLORINATED ALIPHATIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0340 STEP NO--UR/0080/70/043/003/0551/0565
CIRC ACCESSION NO--AP0111534
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0111534
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTOCHLORINATION OF MECHCL SUB2
(I) AT MINUS 10 TO PLUS 60DEGREES IN A FLOW REACTOR INTO WHICH CL AT A
RATE OF 3 L.-1. HR WAS ADMITTED IN A RATIO TO I OF 0.18-0.6:1 YIELDED
MECHCL SUB3 (II) AND CL SUB2 CHCH SUB2 CL (III) IN A CONST. RATIO OF
3.3:1. WHEN THE CL-I RATIO WAS INCREASED IN THIS RANGE, THE YIELD OF II
ROSE FROM 21.1 TO 43.7PERCENT. AS THE YIELD OF POLYCHLORIDES ROSE FROM
1.2 TO 6.0PERCENT. WITH INCREASING TEMP. FROM 20 TO 60DEGREES, THE
CHLORINATION RATE FELL BECAUSE OF REDUCED CL SOLY. AND THE POLYCHLORIDE
YIELD ROSE FROM 3.3 TO 4.4PERCENT. THE MAX. PERMISSABLE VOL. OF O IN
THE CL AND WT. OF FE IN I WERE 0.1 AND 0.001PERCENT, RESP., AND THE
OPTIMAL CONCNS. WERE 0.02 AND 0.005PERCENT. UNDER OPTIMAL CONDITIONS
(20DEGREES AND A CL-I RATIO OF 0.33:1), THE PRODUCT CONTAINED
55.6PERCENT I, 32.0PERCENT II, 9.7PERCENT III, AND 2.7PERCENT
POLYCHLORIDES. PYREX, MO, AND TRANSPARENT QUARTZ GLASS WERE EQUIV. FOR
USE IN THE REACTOR AND IN THE QUARTZ HG LAMP FILTER.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PHOTOCHEMICAL CHLORINATION OF METHYLENE CHLORIDE USING LIGHT
FILTERS -U-
AUTHOR--BRATOLYUBOV, A.S., VASILKOVA, L.I. B
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGARD) 1970, 43(1), 199-202
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHLORINATION, CHEMICAL REACTION RATE, METHANE, METHYL
CHLORIDE, FILTERATION, PHOTOSYNTHESIS, RADIATION EFFECT/(U)PRK2
RADIATION LAMP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1218 STEP NO--UR/0080/70/043/001/0197/0202
CIRC ACCESSION NO--AP0104584
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104584

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE TITLE CHLORINATION WAS CARRIED OUT IN A CONTINUOUS FLOW 27 TIMES 400 MM REACTOR KEPT AT MINUS 30DEGREES AND IRRADIATED BY A PRK-2 LAMP. THE PRODUCTS WERE WASHED WITH 1PERCENT NAOH, DRIED WITH K SUB2 CO SUB3, AND ANALYZED BY GAS LIO. CHROMATOG. AND IODOMETRY. THE DEGREE OF CHLORINATION DEPENDED ON THE MATERIAL OF THE REACTOR AND FILTER AND DECREASED IN ORDER: QUARTZ, PYREX, MOLYBDENUM GLASS.

UNCLASSIFIED

0123

Acc. Nr.: AP0042566Ref. Code: UR0293Gamma Quanta with Energy Greater than 50 MeV in Cosmic Radiation

(Abstract: "Measurements of Fluxes of Gamma Quanta with Energies Greater than 50 MeV in Primary Cosmic Radiation on the 'Kosmos-208' Artificial Earth Satellite," by L. S. Bratolyubova-Tsulukidze, N. L. Grigorov, L. F. Kalinkin, A. S. Melioranskiy, Ye. A. Pryakhin, I. A. Savenko and V. Ya. Yufarkin; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 136-139)

The artificial earth satellite "Kosmos-208" carried a telescope of Cerenkov counters with radiators of Plexiglas and lead glass, surrounded by a scintillator for protection against the background of charged particles, for measuring the fluxes of cosmic γ -quanta with energies greater than 50 MeV. There is a dependence between the counting rate of γ -quanta and geographic latitude, probably related for the most part to imitations of γ -radiation by charged particles. The article gives the values of the total intensities of γ -quanta for the high and equatorial latitudes. The latter data, interpreted as the upper limits of the fluxes of primary γ -rays, are $(1.0 \pm 0.4) \cdot 10^{-4}$, $(6 \pm 3) \cdot 10^{-5}$ and $(1.0 \pm 1.0) \cdot 10^{-5}$ ($\text{cm}^2 \cdot \text{sec} \cdot \text{sterad}^{-1}$) for $E_\gamma \geq 50, 90$ and 146 MeV respectively. Within the limits of error these results agree with the data obtained using the artificial satellite OSO-III.

Reel/Frame

19760544

USSR

RYZHKOV, V.A., BRATOV, A.M., KOLESNIKOVA, I.A., KORNEYEV, V.N.

UDC 621.52:533.59.539.23

"Study Of The Composition Of Residual Gases In Deposition Units Under Industrial Conditions"

Sb. nauch.tr. po probl. mikroelektron. Mosk. in-t elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1971, Issue 7, pp 13-18 (from RZh:Elektronika i yeye primeneniye, No 6, June 1972, Abstract No 6A57)

Translation: The results are presented of an analysis with the aid of a KM-1 quadrupole mass spectrometer of the composition of residual gases in the vacuum chambers of various types of deposition units. Under industrial conditions, and in the types of deposition units considered, the composition of residual gases differs but little and is determined by the technological process in progress and the individual condition of the unit. Vapors of water, nitrogen and oxygen and various hydrocarbons are the principal components of residual gases in deposition units. Substantial changes of the composition of the residual gases occur during heating of the substrates and deposition. The composition of the residual gases during deposition of thin films depends on the form of the material which is vaporized. The KM-1 mass spectrometer showed its usefulness for conducting qualitative analyses of residual gases under industrial conditions. A.P.

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USSR

BRATOV, K. B., BABAYEV, I. I.

"Determination of Organic Chloride Pesticides by Thin-Layer Chromatography with Some Modifications"

Publikatsiya Dushanbin. In-ta Epidemiol. i Gigiyeny [Publications of Dushanbe Institute of Epidemiology and Hygiene, No 44, 1971, pp 37-38, (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 N609 by T. A. Belyayeva).

Translation: In order to determine residual quantities of DDT and HCCH in water, they are extracted by CHCl_3 , the extract is dried over Na_2SO_4 for 1 hour, evaporated, the residue is dissolved in hexane and chromatographed on a plate with Al_2O_3 , preliminarily activated with UV rays, moving phase hexane, then re-irradiated with UV. The sensitivity of the method is 0.005 mg/l.

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USSR

UDC 621.52:539.23:621.315.592

YAROVYKH, B.YA., BRATOVA, G.S.

"Preparation Of The Surface Of Pyroceramic Substrates Before Vacuum Deposition"

Sb.nauch. tr. po probl. mikroelektron. Mosk. in-t elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1971, Issue 7, pp 43-48 (from RZh:Elektronika i yeye primeneniye, No 6, June 1972, Abstract No 6A61)

Translation: Effective methods were developed and tested for increasing adhesion in film-substrate systems as the result of an improvement of the cleansing of the surface of the latter. In order to obtain comparative quantitative characteristics, a method was used of measuring the contact angle (wetting angle) of drops of oil. Methods for checking cleansing of the surface and for evaluation of the sensitivity of these methods are developed. The new methods of cleansing substrates before deposition of thin-film coverings on them were introduced into industry; equipment used at present in production was designed. 3 ref.Ye.G.

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BRATOVANOV, D.

SO: JPRS 53272

UDC: 613/614

2 JUNE 71

THE OBJECT AND SUBJECT OF HYGIENE, GENERAL AND SOCIAL HYGIENE, AND OF EPIDEMIOLOGY

Article by D. Bratovanov (Plovdiv); Moscow, Voenik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, April 1971, pp 32-38]

Some gnosiological positions. Every science has its subject which is investigated by the appropriate method. In the last few years, due to the rapid development of cognition an increasing number of new sciences is appearing which deal with different areas of objective reality (differentiation of science) as well as new sciences emerging on the boundary of the old ones (integration of science). These mutually opposite processes are at times interwoven. Quite often the same object of reality becomes the subject of investigation of different scientific disciplines dealing with it from different aspects. Differentiation of the object and subject of a science becomes particularly important at this time when the number of so-called border sciences is gradually increasing. "The subject of investigation differs from the object in that it implies a specific aspect, a point of view from which a given object is investigated." For example, man is the object of investigation of many sciences: anatomy, physiology, pathology, hygiene, and others, each of which investigates man from its point of view.

The following is typical for each science: 1) definition of the subject of investigation from the corresponding object; 2) creation of concepts corresponding to this subject and object; 3) establishment of the chief law (or laws) inherent to this subject; 4) discovery of the principle or creation of the theory that would permit explaining a set of facts (B. Kedrov and A. Spirkin).

In spite of the distinct criteria of formation of the different branches of science, in practice, at the present level of development of scientific cognition, some fundamental difficulties emerge since reality is dialectical

M. V. Martynov, Kibernetika, Semiotika, Lingvistika (Cybernetics, Semiotics, Linguistics), Nauka i Tekhnika Publishing House, Moscow, 1966, p. 22.

USSR

UDC 669.15.018.44:669.782

BRATUKHINA, V. A., DYNKOVA, YU. V., MARKOV, V. G.

"Effect of Silicon on the Properties of Pearlitic Steels Designed for Operation at High Temperatures"

Metallovedeniye -- V sb. (Physical Metallurgy -- collection of works), No 14, Leningrad, Sudostroyeniye Press, 1970, pp 130-139 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I630)

Translation: A study was made of the effect of Si on the mechanical and corrosion properties of steel 10 (1.16-3.43% Si), 15Kh (1.22-3.24% Si), 15Kh2 (2.25-3.31% Si), 15Kh1M (0.74-1.71% Si), 15Kh1MF (0.37-1.90% Si), Kh2N (0.25-1.47% Si). It was demonstrated that steel containing up to 1.8% Si has a satisfactory combination of mechanical properties. A higher content of Si in pearlitic class steel is inexpedient as a result of developing brittleness of the material. There are 7 illustrations, 5 tables, and a 9-entry bibliography.

1/1

USSR

UDC 513.812

BRATUKINA, Yu. P. *B*

"Expansion of the Concept of a Spherical Representation in Lobachevski Space"

Uch. zap. Kirovskii gos. ped. in-t (Scientific Reports Kirov State Pedagogic Institute), 1969, No 30, pp 10-20 (from RZh-Matematika, No 3, Mar 1970, Abstract No 3A712)

Translation: The convex surface F and the surface of constant curvature Σ in a Lobacheski space are considered. A set M is taken on F and through each one of its points are drawn all reference planes of surface F . The cluster of axes of Σ , perpendicular to the reference plane, intersects Σ along the so-called cyclic representation of set M . Several properties of cyclic representations of the specific figures of a hyperbolic plane are studied.

V. Koba

1/1

- 24 -

Acc. Nr: **AP0052316**

Ref. Code: **UJ0428**

PRIMARY SOURCE: **Fiziologichnyi Zhurnal**, 1970, Vol 16, Nr **3**,
pp **257-264**

ON AFFERENT INTERCENTRAL CONNECTIONS OF CEREBELLAR CORTEX

N. V. Bratus', G. V. Yanchik

Department of Physiology, Medical Institute, Vinnitza

Summary

Evoked potentials (EP) of cerebellar cortex were studied in cats anaesthetized with thyopental on stimulation of spinal cord (rostral spino-serebellar tract), n. ruber, hypothalamus posterior (corpus mammilaris).

EP occurred on stimulation of spinal cord at a depth of 500 μ and more, the threshold reached 1 V. In focus maximal activity (FMA) of cerebellar cortex (culmen, l. simplex, tuber vermis) EP were expressed by a monophasic electropositive wave with latency of $7.5 \pm 1.6 - 10.8 \pm 1.3$ msec (in dependence on the stimulation level C_4 or T_6) when stimulating deeper structures, to 2000 μ , EP augmented in amplitude and duration with appearance of additional components complicating an electropositive phase. Around FMA EP were expressed with augmented latency and unconstant form.

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When stimulating of n. ruber EP occurred in these regions of cerebellar cortex with better expressions on contralateral side to stimulation. The threshold reached 3—6 V. A two-phase potential was a basis of EP, probably, with additional components in FMA, EP of paramedian lobes were characterized by initial negativity. The latency reached 5.1 ± 1.7 — 9.3 ± 0.5 msec in dependence on the region of leading.

On stimulation of corpora mammillares EP occurred in paleocerebellar areas of cerebellum and are absent in hemispheres. The threshold reached 3—6 V. FMA coincided with one in preceeded series, but EP were expressed equally bilaterally, except for paramedian lobe, where EP expressed better on ipsilateral side. The peculiarity of these EP consisted in improvement of expression of distinctive electropositive components and even electronegative ones. Latency reached 6.3 ± 0.3 — 8.3 ± 0.4 msec.

A conclusion was drawn, that peculiarities of cerebellopetal intercentral connections manifested on timed characteristics of EP and expression of its components only, but not the form of EP.

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USSR

UDC 612.13:797.22

GUREVICH, M. I., IL'CHEVICH, N. V., KARTSEVA, ~~BRATUS', V. V.~~ and DUKHIN, E. O.,
Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences, Ukrainian
SSR, Kiev

"Effect of Underwater Activity on the Human Cardiovascular System"

Kiev, Fiziologicheskii Zhurnal, No 5, 1972, pp 606-613

Abstract: Hemodynamic shifts were studied in 10 aqualungers age 18 to 29 after submersion, while exercising under water, and while swimming with an oxygen apparatus. Immediately after submerging to a depth of 5 to 10 m in a No 2 outfit the men exhibited an increase in arterial pressure, decrease in pulse pressure, slowing of the heart rate, reduction in the cardiac output, and increase in resistance of the peripheral blood vessels. The performance of graduated physical exercise under water elevated arterial pressure, slowed the pulse rate, increased the resistance of the peripheral blood vessels, but had little effect on the cardiac output or heart rate. Underwater swimming elevated arterial pressure, slowed the heart rate, decreased the cardiac output, and increased the resistance of the peripheral vessels.

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- 45 -

USSR

UDC 546.185-325+54-1454

KRUPATKIN, I. L., and BRATUSICHAY, A. N., Kalinin Polytechnical Institute

"Physico-chemical Analysis of Binary Systems of Phosphoric Acids and Some Ketones"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 1, Jan 71, p 177

Abstract: Binary systems of phosphoric acid with benzophenone, methyl-ethylketone, and cyclohexanone were studied by density, viscosity, surface tension and specific electroconductivity at 25, 35, and 45° C. In all systems, a 1:1 composition of the compounds formed was postulated on the basis of experimental data, except in the phosphoric acid-methylethylketone system, where a small amount of a 2:1 compound forms. Analysis of electroconductivity data showed that addition products of phosphoric acid and benzophenone or cyclohexanone are weakly disproportioned; with methylethylketone, H_3PO_4 forms nonconductive compounds. The compounds studied may be placed in the following order of decreasing basicity: methylethylketone, cyclohexanone, benzophenone.

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USSR

UDC 615.331 (PRODIGIOSANUM).015.46

YERMOLO'YEVA, E. V., VAYSHENKI, G. YE., DRAUDE, A. I., TANANENKO, L. A.,
LISHINA, L. A., OLIVENTAL', N. I., and SICHENBAKOVA, E. G., Laboratory of
Medical Pathology and Laboratory of New Antibiotics, Chair of Microbiology,
TsIU [Central Institute for the Advanced Training of Physicians], Moscow

"The Effect of Prodigiozan Inhalation on the Immunological Reactivity of the
Human Body"

Moscow, Antibiotiki, Vol 18, No 1, 1973, pp 76-79

Abstract: Inhalation of prodigiozan promotes immune reactions in the human
body. Thus, in a group of 78 subjects aged 19 to 59, a single inhalation of
5 ml of a 0.04% prodigiozan aerosol (obtained under 0.5-0.8 atm at a rate of
12-15 L/min) increased the number of active neutrophils from 53 to 74% in 24
hrs in all subjects, and the increased phagocytic activity was maintained at
least up to the 48th hr after inhalation. At the same time, the inhaled
prodigiozan increased alkaline phosphatase activity in the neutrophils of
peripheral blood from 42 to 115 conventional units in 35 out of 39 subjects,
raised lysozyme concentration from 2.7 to 3.5 mcg/ml of blood serum in 12 out
of 27 subjects, and induced formation of interferon in titers of 7-13 units/
ml serum in 10 out of 10 subjects. It is concluded that a single inhalation of
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- 16 -

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YERMOL'YEVA, Z. V., et al., Antibiotiki, Vol 18, No 1, 1973, pp 76-79

prodigiozan aerosol significantly stimulates humoral and cellular components of human immunological reactivity.

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USSR

UDC 629.78.015.017.2

BOBTSOV, V. A., BRAUDE, A. Z., KUZMAK, G. Ye.

"Approximate Synthesis of Optimal Control in Variational and Games Problems of Flight Mechanics with Free End of the Trajectory"

Uch. zap. Tsentr. Aerogidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], Vol 3, No 3, 1971, pp 61-71, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 9, 1972, Abstract No 9.41.115, from the Resume).

Translation: The task of synthesis of optimal control is studied in variational and games problems for cases when there are no conditions at the end of the trajectory except for the conditions defining the end of the trajectory. An approximate method is suggested for solution of this problem, representing a development of the method of local optimization, which is convenient for computer realization. Using this method, it is often possible to find simple approximate analytic solutions of the synthesis problem. Three examples are studied as illustrations: the problem of flight to maximum range, the problem of climbing to an assigned altitude in the minimum time and the problem of the game of two persons controlling the planar motion

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USSR

BOBTSOV, V. A., BRAUDE, A. Z., KUZMAK, G. Ye., Uch. zap. Tsentr. Aerogidrodinam. In-ta, Vol 3, No 3, 1971, pp 61-71

of two material points. Results are produced in the first two examples which have simple physical sense. 3 figures; 7 bibliographic references.

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- 19 -

Television

USSR

UDC: 681.14.523.8

BRAUDE, G. V., BONCH-BRUYEVICH, A. M., GEL'FANDEYN, Ya. A., GULIN, I. N.,
KRIVOSHEYEV, M. I., MIRSKIY, G. Ya., TISHCHENKO, I. M., TEL'NYKH, O. A.,
KHESIN, A. Ya.

"A Television Device for Determining the Coordinates of Point Objects"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 26, Sep 71, Author's Certificate No 313210, p 165

Translation: This Author's Certificate introduces a television device for determining the coordinates of point objects. The device contains a television transmitting tube with memory, an output scanning unit, a video signal processing unit, an erasure unit, a synchronizing unit, a cadence pulse generator, an optical shutter, and a data input module. As a distinguishing feature of the patent, the accuracy of coordinate determination is improved by tying series-connected horizontal and vertical interrogation counters to the output of the cadence pulse generator. The counter outputs are connected through shaping matrixes for horizontal and vertical deflection to the input of the output scanning unit. At the same time, a second output of the vertical interrogation counter is connected through a decoder to the data input module.

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1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EXPERIMENTAL INVESTIGATION OF THE EFFECT OF IMPURITY ATOMS AND
DISLOCATIONS OF X RAY DIFFUSE SCATTERING INTENSITY -U-
AUTHOR-(02)-BRAUDE, I.S., STARTSEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ, ZH. (RUSS, ED.) 1970, 15(2), 224-7

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ANGULAR DISTRIBUTION, SINGLE CRYSTAL, X RAY SCATTERING,
CRYSTAL DISLOCATION PHENOMENON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0550

STEP NO--UR/0185/70/015/002/0224/0227

CIRC ACCESSION NO--AP0121222

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANGULAR DISTRIBUTION OF THE INTENSITY OF X RAY DIFFUSE SCATTERING BY SINGLE CRYSTALS OF NAI AND TL AND "PURE" NONANNEALED AND ANNEALED CRYSTALS, WAS MEASURED. THREE TYPES OF CHARACTERISTIC DEPENDENCES OF THE INTENSITY OF THE NAI SAMPLE WITH VARYING STRUCTURE WERE OBSD. AN INCREASE IN THE DISLOCATION D. TO THE ORDER OF 1.5 CAUSES AN INCREASE IN THE INTENSITY BY A FACTOR OF 1.5. THE INTRODUCTION OF IMPURITIES (EVEN UP TO 0.1 WT. PERCENT TL) CAUSES AN INCREASE IN THE INTENSITY BY A FACTOR COMPARABLE TO THAT OF THE "PURE" SAMPLES. FACILITY: FIZ.-TEKN. INST., KHARKOV, USSR.

UNCLASSIFIED

172 010 UNCLASSIFIED PROCESSING DATE 040470
TITLE--2,6,BIS,2, HYDROXY,5,CHLOROBENZYL,4,CHLOROPHENOL, A SUBSTANCE WITH
ANTHELMINTIC ACTION -U-
AUTHOR-(03)-BEKHLI, A.F., BRAUDE M.B., KOSHELEVA, L.I.
COUNTRY OF INFO--USSR **B**
SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 32-5
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--WORM, PARASITOLOGY, CHEMICAL SYNTHESIS, GASTROINTESTINAL DRUG,
DRUG PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0541

STEP NO--UR/0450/70/004/003/0032/0035

CIRC ACCESSION NO--AP0137630

UNCLASSIFIED

2/2 010
CIRC ACCESSION NO--AP0137630
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE TITLE NONTOXIC ANTHELMINTIC (II) WAS ISOLATED DURING THE COURSE OF DICHLOROPHEN (II) SYNTHESIS. A MIXT. OF 60 G P-CLC SUB6 H SUB4 OH AND 21.4 G 32PERCENT HCHO-MEOH IN THE PRESENCE OF H SUB2 SO SUB4 GAVE 76 G II, M. 172-2.5DEGREES. A BY PRODUCT RECRYSTD. FROM AQ. ETOH GAVE 2.7 G COMPD., M. 227-8DEGREES; FURTHER CRYSTN. FROM 115 ML PHME YIELDED 1.5 G I, M. 235-6DEGREES. A MIXT. OF 128.5 G P-CLC SUB6 H SUB4 OH, 46.5 G NaOH IN 185 ML H SUB2 O, AND 265 ML 37PERCENT HCHO WAS STIRRED 5 HR AT 50-60DEGREES AND KEPT 3 DAYS AT ROOM TEMP. TO YIELD 68.9PERCENT 4,CHLORO,2,6,BIS(HYDROXYMETHYL),PHENOL (III), M. 164DEGREES (H SUB2 O). A MIXT. OF 151.2 G III AND 15.6 ML HCL WAS ADDED TO 800 G MOLTEN P-CLC SUB6 H SUB4 OH AND THE MIXT. HEATED 4.5 HR AT 40DEGREES TO YIELD 70.7PERCENT I, M. 235-6DEGREES (ETOH).
FACILITY: INST. MED.
PARAZITOL. TROP. MED. IM MARTSINOVKOGO, MOSCOW, USSR.

UNCLASSIFIED